
**Cranes — Access, guards and
restraints —**

**Part 1:
General**

*Appareils de levage à charge suspendue — Moyens d'accès, dispositifs
de protection et de retenue —*

Partie 1: Généralités



PDF disclaimer

This PDF file may contain embedded typefaces. In accordance with Adobe's licensing policy, this file may be printed or viewed but shall not be edited unless the typefaces which are embedded are licensed to and installed on the computer performing the editing. In downloading this file, parties accept therein the responsibility of not infringing Adobe's licensing policy. The ISO Central Secretariat accepts no liability in this area.

Adobe is a trademark of Adobe Systems Incorporated.

Details of the software products used to create this PDF file can be found in the General Info relative to the file; the PDF-creation parameters were optimized for printing. Every care has been taken to ensure that the file is suitable for use by ISO member bodies. In the unlikely event that a problem relating to it is found, please inform the Central Secretariat at the address given below.

This document is a preview generated by EVS



COPYRIGHT PROTECTED DOCUMENT

© ISO 2008

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office
Case postale 56 • CH-1211 Geneva 20
Tel. + 41 22 749 01 11
Fax + 41 22 749 09 47
E-mail copyright@iso.org
Web www.iso.org

Published in Switzerland

Contents

Page

Foreword.....	iv
1 Scope	1
2 Normative references	1
3 Terms, definitions and symbols	1
3.1 Terms and definitions	1
3.2 Symbols	3
4 Access	3
4.1 Classification of access	3
4.2 Selection of access	4
5 General requirements	5
6 Stairs and stepped ladders	7
7 Rung ladders and footholds	8
7.1 Rung ladders	8
7.2 Footholds	12
8 Hoop guards	13
9 Walkways, inclined walkways, platforms and manholes	15
10 Handholds, handrails, intermediate guard-rails and side protection	17
11 Minimum free space for walkway and inclined walkway	18
12 Hatch	18
13 Guards and restraints	20
13.1 Guards for moving parts	20
13.2 Prevention of objects from falling	20
14 Electrical guarding	20
Annex A (informative) Examples of surface considered to be slip resistant	21
Bibliography	22

Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO 11660-1 was prepared by Technical Committee ISO/TC 96, *Cranes*, Subcommittee SC 7, *Tower cranes*.

This second edition cancels and replaces the first edition (ISO 11660-1:1999), which has been technically revised.

ISO 11660 consists of the following parts, under the general title *Cranes — Access, guards and restraints*:

- *Part 1: General*
- *Part 2: Mobile cranes*
- *Part 3: Tower cranes*
- *Part 5: Bridge and gantry cranes*

Cranes — Access, guards and restraints —

Part 1: General

1 Scope

This part of ISO 11660 establishes the general requirements for access to control stations and other areas of cranes as defined in ISO 4306-1, during normal operations, maintenance, inspection, erection, dismantling and emergency. It also deals with guards and restraints in general, concerning the protection of persons on or near the crane with regard to moving parts, falling objects or live parts.

The particular requirements relating to access, guards and restraints for the various types of cranes and lifting appliances are given in ISO 11660-2, ISO 11660-3 and ISO 11660-5.

In some cases, the particular requirements may not comply with the general requirements. Different dimensions can be permitted provided an equivalent degree of protection is achieved.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 4306-1, *Cranes — Vocabulary — Part 1: General*

IEC 60204-32, *Safety of machinery — Electrical equipment of machines — Part 32: Requirements for hoisting machines*

3 Terms, definitions and symbols

3.1 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 4306-1 and the following apply.

3.1.1

rung ladder

means of access consisting of side-rails and rungs which accommodate both feet, used where the angle of inclination to the horizontal of inclination exceeds 75°

3.1.2

stepped ladder

means of access consisting of side-rails and steps which accommodate both feet, used where the angle of inclination to the horizontal exceeds 60°

3.1.3

stair

means of access used where the angle of inclination to the horizontal does not exceed 50°